

1. Attendees

Janis Heple, Chris Fennessy (Aerojet), Kevin Mayer, (EPA), Paul Schubert (Golden State Water Co), Alex MacDonald (RWQCB), Jimmy Spearow, Allen Tsao, Burt Hodges and Stephen Green (SARA), George Waegell (Morrison Creek, Inc.), Rick Bettis (Sierra Club), David Breinke, Claudette Altamirano (Recorder, Weston Solutions, Inc.).

2. The May minutes were approved with minor changes regarding Natomas water to be reviewed with Janis Heple.

3. Groundwater OU Final Treatment System Completion; What's Next? – Kevin Mayer. EPA

The completion of the remedy at OU3 starts the five year review clock for the whole site. On June 30th the construction completion report was sent communicating that the remedial action has been completed. On July 7th, 2011, EPA sent a letter notifying Aerojet that the construction completion report was approved and that the remedy is now operational and functional. Therefore a five year review will be required by July 7th, 2016. Five year reviews are required for all superfund sites but sometimes the reviews do end.

EPA doesn't think that a full review every five years is enough so they are directing Aerojet to provide a report every six months that includes monitoring (clock has started for OU3).

EPA wanted the completion of the Remedial Action stage and transition to long-term operation phase to happen as soon as possible, so EPA used the short completion report to document the change in status. A more detailed interim remedial action report for OU3 is due within one year (July 7, 2012) that will include items such as as-built drawings and details of the treatment system.

There will be more interim remedial action reports (for other OUs). When all interim remedial action reports are completed, they will be put together to review if the remediation works overall.

The first five year review will need to cover OU's with an approved ROD and workplan. This means that OU5 and perhaps OU6 may be included in the first five year review.

Comment – Janis: A public notice was published in the Sacramento Bee.

Kevin will send a copy of the public notice to Claudette for distribution.

Allen requested that the OU maps be distributed with the minutes.

The maps increase the file size substantially which make it difficult or impossible for those with slow internet connections to successfully receive the minutes. We will work on ways to decrease the size so the maps can be included with the email distribution of the minutes.

Kevin explained that EPA's top priority is to prevent exposure by stopping the movement of contaminated water off-site.

OU-1 included the whole site

OU-2 didn't work out and the OU2 areas are now included in other OUs

OU-3 is the first OU to be completed

OU- 5 is the Perimeter OU.

There are different priorities regarding source areas up through OU9; including remove or isolate source areas so they no longer feed groundwater contamination. Aerojet would like to reduce the foot print of the regulated areas to allow for redevelopment of clean areas.

4. OU5 ROD response to comments actions – tracking actions continued– All

An eight page table of *OU5 CAG Items of Concern* was distributed to the CAG (see attached). The table lists EPA response to comments regarding OU5 from the ROD that the CAG would like further action/tracking. Discussion of a number of the comments in the table ensued.

(Kevin) Comment number SC-01 –asks about a fundamental issue of how EPA/Superfund cleanup standards interact with differing State or community standards. EPA uses promulgated standards that sometimes conflict with State levels, especially in California. In California, the Superfund program has agreed to disagree with cleanup standards (California has goals which have not gone through a formal promulgation). If the State goes through the regulatory process to promulgate (regulate) the standards then EPA could consider the lower California goals as enforceable cleanup standards (note that the State cannot enforce goals or guidance numerical levels).

Allen – So how do you reconcile neighboring sites with differing (lower) cleanup levels?

Kevin – EPA does not have the authority to regulate to the lower levels. EPA is not demanding that no contamination gets past the line. Theoretically EPA would allow contamination to remain given it is below regulatory limits or risk assessment numbers even though the concentration is still above detection limits.

Alex presented State related comments. The State is working with Aerojet on a system design that can meet State levels. TCE is driving the cleanup levels below the MCL

(EPA maximum contaminate level for drinking water). The remedies are working to the lower level. The State of California is reviewing MCLs. Public health goals (PHG) are risk based with a safety factor applied. An example is Chrome VI has a 3000 fold safety factor. The PHG for Chrome VI set at 0.02 µg/L (0.02 ppb) was published today. The old PHG for TCE was 0.8 ppb and was changed to 1.7 ppb on re-evaluation.

Jimmy – EPA allows an exposure of 10^{-4} to 10^{-6} as a risk management range; what is the EPA doing to ensure the public knows that there is an additional risk at allowed contaminant levels.

Answer : The ideal is to manage risk by managing exposures.

In addition Jimmy Spearow commented that EPA had mentioned that the clean up would achieve a risk of 10^{-6} to 10^{-4} and that that was satisfactory since that was the risk management range. Speaking for the CAG Jimmy stated that we did not concur. That the point of departure for cancer risk is 1×10^{-6} and the risk management range extends from this point up to 10^{-4} . The risk range of 10^{-4} to 10^{-6} is not intended to imply that any risk within this range is acceptable. The actual level of acceptable risk is a site-specific risk management decision, with 1×10^{-6} as the point of departure for making such decisions. Clear justification must be provided for risk management decisions which result in residual risk levels greater than 1×10^{-6} .

Rather than the issue being over once one achieves the risk management range, AJ would need to indicate what risk management decisions were being made to manage and minimize risk in the 10^{-6} to 10^{-4} range. Risks exceeding the 10^{-4} range would also need additional remediation/ mitigation to reduce risks at least down to the within the risk management range of 10^{-6} to 10^{-4} for lifetime cancer risk

How do you inform the public regarding the difference in allowable risk levels between EPA and California?

Until EPA has promulgated regulatory levels or risk based levels they cannot enforce lower levels.

What is being done to reduce risk to individuals?

Paul Schubert – Golden State Water has public meetings regarding Public Health Goals and costs for the cleanup.

Is there adequate oversight? It does not appear that there is adequate oversight.

Alex – What is meant by adequate oversight. Does not agree that oversight is inadequate.

Alex is still working with Aerojet; the State does not necessarily like EPA's cleanup numbers and believes the TCE MCLs will be lowered.

Levels in air are continuously ratcheted down due to technological advances or detection limits.

Jimmy – There is a potentially large population exposed (to contaminants) in the risk management range. Concerns include synergistic effects and who pays if the water company needs to perform additional cleanup. Even exposure below the MCLs may still be a risk.

Janis- Should we look at specific pathways?

What are ARARs? Applicable or Relevant and Appropriate Requirements.

Can EPA waive State ARARs?

The federal reviewers can determine that proposed ARARs are not ARARs or waive them if they are not technically practicable.

Comment SC-09 – Jimmy discussed that the RSL for chrome VI has been lowered. Kevin will look at the new levels. Alex noted that there is only one chrome VI site in OU6 and is not an issue for OU5.

Comment SC-26 – illustrates a common theme throughout the next few pages of comments from water districts. Can EPA work with Aerojet on the design to address these issues?

Alex – They are required to work with water districts. The OU3 order requires a groundwater management plan. The same is expected for OU5.

Can EPA let local water districts have input on the design? They have given water districts copies to review. Aerojet paid for a consultant to help Fair Oaks review the document.

Kevin – at other sites there are advisory work groups made up of water purveyors; maybe a regional groundwater association can provide a mechanism for review (mainly north of river).

The area south of the river is not as well organized (yet). There is a new group, Central Sacramento Ground Water Authority (American to Cosumnes). There may be another authority being developed south of the Cosumnes.

Allen – When Aerojet sends out draft design can a copy be sent to the ground water concerns? They can use the list of commenters.

SC-97 – Right now there is a discharge to Alder Creek. The new permit (NPDES) does not allow discharges to Alder Creek.

The Permit process is considered functionally equivalent to CEQA/NEPA.

Kevin – EPA/ superfund is concerned that permitting processes are used to circumvent the cleanup and cleanup selection process.

Allen – What about cumulative impacts, CERCLA doesn't account for those?

Paul – GSW is looking at how to deal with these issues.

Rick – Central Sacramento Groundwater Authority now has a data management system so they can track issues but it is limited by budget and technical skills.

5. General Aerojet Cleanup Overview: Alex MacDonald. RWQCB

(Handout provided by Alex MacDonald)
Aerojet Activities – July 2011 CAG Meeting
(Bold Items shown on Figure)

- A **GET L-A**. NO CHANGE - Construction has been completed at the system is up and operating at approximately 900 gpm.
- B **GET KA**: NO CHANGES. Operating with all initially planned wells operating, including former **AC-7** (Georgetown). Flow is approximately 1700 gpm and could be increased up to 1900 gpm. **AC-12** has once again been turned off due to NDMA concentrations near 5 ppt and is being connected to **GET K-A**. Aerojet is looking at having an “open house” for the public at **GET K-A** sometime in the future.
- C **AC-6** - NO CHANGES treatment system to remove perchlorate has been completed and system is operational. Discharge of water not into the distribution system is under Aerojet's NPDES permit.
- D **AC-18** and **AC-23** (NO CHANGES) have been provided with perchlorate IX units with and startup of the treatment systems will commence when perchlorate concentrations become greater. Both systems have undergone verification testing. Currently the wells contain around 1-3 ppb perchlorate.
- E **GET H-A**: NO CHANGES. Working on getting two new extraction wells (White Rock Park and Coloma Road area) on north side of US 50 back to **GET H-A** has been completed. Wells operational in next week or so.
- F **GET B** – NO CHANGES **GET B** has been expanded to accept transfer of **GET A** facility to the **GET B** location and to accept water from new extraction wells located in southern Zone 3 near **Teichert**. Two extraction wells north, east and south of **Teichert** are now hooked up to **GET B**.
- G **GET J** - working on filtration system to remove fine particles coming into the treatment system from one of the extraction wells.

- H White Rock Road North Dump – NO CHANGES The treatment systems is up and operating to treat two extraction wells and the AKT-1 well. Water is currently sent back to GET B for disposal. When needed by **Teichert** for their use the water will be provided to them.
- I **New Monitor Wells:** NO CHANGES Aerojet is planning several new monitor and/or extraction wells:
1. New monitor well northwest of the GET L-B facility to help define the NDMA plume and evaluate capture.
 2. Monitor well between **AC6** and **AC12** to help define NDMA plume and provide information for placement of an additional extraction well to make sure NDMA does not get to **AC6**.
 3. Monitor well southeast of AC22A/B to help define plume upgradient of those wells.
 4. Monitor well in the GET E/F area to assess capture of the on-site extraction system and help locate a potential additional extraction well.
 5. Extraction well in the area of Chem Plant 2 to intercept deeper flow from sources upgradient that are not captured by shallower extraction wells there.
 6. NEW – pair of monitor wells in the vicinity of Teichert to help define the plume and capture by existing extraction wells.
- J **Chettenham Well:** NO CHANGES. The Chettenham well remains off and the concentrations of perchlorate have remained around 3-4 ppb. Aerojet has reached an agreement with Cal-American Water Company concerning the Chettenham Well. The treatment system has been removed.
- K Sacramento County Water Supply Replacement Issues. NO CHANGES. Aerojet and Sacramento County are continuing negotiations on water replacement issues. Meetings are occurring one to two times per week. City of Folsom, The Boeing Company and Golden State Water Company also participate in some or all of the meetings.
- L Perimeter Operable Unit – NO CHANGES - Aerojet is looking at removal of soils at site **C41** within the PGOU. Soils are impacted by perchlorate to the groundwater (approximately 80 feet) and perchlorate is in the groundwater. The area is within the proposed development area. To facilitate development, Aerojet would like to have the issue addressed sooner rather than waiting for ROD and subsequent order/implementation. Soils would be removed in the upper 10 feet to levels that allow unrestricted use.
- M Boundary OU – (NO CHANGES) Aerojet evaluated comments on the RI submitted by Agency staff on human health and ecological risk aspects. Aerojet provided responses and is waiting for a reply in order to proceed. The Feasibility Study is waiting for all of the comments to come in on the RI so as all the sites that need to be addressed in the FS are included.

N Treatability Studies:

- i) **Line 03.** Redox box delivered along with walnut shells and sulfur to look at perchlorate reduction. Has been operating for one month at 3-7 gpm and results are promising. Doing well.
 - ii) **Phytoremediation at Cavitt Ranch** – cleanup of perchlorate in groundwater using cottonwood trees. The trees have currently failed to establish themselves and the project is currently on hold
 - iii) **Bioremediation of NDMA** – will be performing in-situ evaluation of biodegradation of NDMA in Zone 4 (GET A area). A SERDP/ESTCP project. Field work not yet scheduled. Comments on work plan were provided by the Agencies.
 - iv) **Encapsulated Bacteria for NDMA Destruction.** Evaluating the feasibility of the process. Operating at **GET B** – some positive results.
 - v) **HIPOx for NDMA destruction at GET B** – using hydrogen peroxide and ozone to break the NDMA bond. Evaluating potential – currently used at ARGET facility for 1,4-dioxane and TCE removal. Starts August 2nd.
- A Island OU -NO CHANGES. Assessing RI data for the RI/FS. IOU groundwater modeling work plan being developed.
- B Eastern Operable Unit – NO CHANGES - all initial and follow-up sampling completed last week. Aerojet and their consultants are now developing the Remedial Investigation/Feasibility Study report.
- C Central Operable Unit – NO CHANGES. Draft sampling plan has arrived, agency review has been completed and comments have been sent to Aerojet.
- D IRCTS: (NO CHANGES)
- i) **Sigma Complex In-situ Bioremediation of Groundwater.** NO CHANGES - System has been operational for two years. Boeing is adding an electron donor to remediate high concentrations on perchlorate in groundwater at the Sigma Complex. Boeing is recirculating groundwater and adding an electron donor (acetic acid) to stimulate biological growth and reduction of perchlorate. Initially the system will include one extraction and one recharge well, and several monitor wells. System is working very well.
 - ii) **White Rock Road Dumps 1 and 2.** NO CHANGES. These two old burn dumps will be combined at the Dump 2 location on the IRCTS. That area is slated to be a park in the Rio Del Oro development. Looking at doing the work the end of this summer. Comments supplied on Sampling and Analysis Plan and Remedial Design Plan
 - iii) (NO CHANGES) The first modular biotreatment cell at **GET F Sprayfield and PBA** to remove perchlorate from extracted groundwater has been constructed and filled with media. The liner was found to leak. Thus, the cell was emptied and the liner repaired. The cell will be tested and then

commence operation where the treated water is sent back to the ground for recharge. Awaiting completion of power to the site by SMUD.

6. Aerojet Community Updates, Chris Fennessy, Aerojet

No additional updates this month.

7. Schedule – The next meeting is scheduled for September 21, 2011.